

Intellectual Property for Engineers & Entrepreneurs

EE P 500 C Au 25: Graduate Seminar

Where: ECE 303

When: Wednesdays from 4:30 pm to 6:20 pm

Summary:

Harnessing innovation is a key business capability in technology-driven companies. This course provides a roadmap for understanding and navigating the complex field of Intellectual Property (IP) law with a particular focus on the electrical engineering and computer science technology sectors. The course will first introduce IP and its critical role in protecting and capitalizing on technological advancements. The curriculum then moves into specifics, such as patenting inventions, copyrighting creative works, and the strategic importance of trademarks and trade secrets. It also tackles the practical aspects of IP in company formation, operational challenges, and competitive strategy. The course is designed to address the gap often found in newly hired engineers who may lack the ability to recognize and protect their inventions during the research & development process. Through a combination of theoretical knowledge and hands-on exercises, the goal is to train students to become more valuable employees in the tech industry and more successful at capturing innovation as entrepreneurs.

Course Objective:

The objective of this course is to provide a practical understanding of intellectual property (IP) concepts, with a focus on protecting inventions within the context of electrical and computer science technologies. Students will gain foundational knowledge and skills to effectively navigate IP issues commonly encountered in technology companies. The course is tailored to empower students to identify, secure, and manage IP rights, thereby enhancing their contribution to innovation and competitiveness in various roles within the tech industry. By the end of the course, students will be better equipped to protect their own ideas and/or support the IP strategies of their employers or their own entrepreneurial ventures.

Instructors:

Lee Gardner (gardneli@uw.edu): Lee is Senior Patent Counsel at Google, where he manages patent and trade secret issues and oversees aspects of the company's IP portfolio. He holds a JD from Georgetown University Law Center, an MBA from the University of Hawai'i at Manoa, and a BS in Computer Systems Engineering from Boston University. His experience includes serving as an Officer in the US Navy. Lee's background equips him to teach students about the practical aspects of IP law in the tech industry.

Joseph Probst (jprobst@dority-manning.com): Joseph is the managing principal of the Seattle office of Dority & Manning, an intellectual property boutique. Joseph focuses on patent procurement in electrical and computer technology areas, working with inventors and corporations to secure patents and manage global patent portfolios. Joseph's approach to IP law emphasizes practicality and a focus on commercial value. He works with clients to provide strategic IP counseling in view of the competitive landscape of their technology markets. Joseph holds a JD from the University of Washington School of Law and a BS in BioEngineering from Clemson University.

Eric Zaiser: Eric is Senior Counsel at Google, where he manages patents and IP for the Quantum Computing and Productivity Applications portfolios. Eric has experience with commercial, M&A, patent prosecution, and portfolio development and analysis matters for advanced and emerging technologies. He holds a JD from the University of South Carolina School of Law and a BS in Electrical Engineering from Clemson University.

Grading:

This is a credit/no-credit course. To receive credit, you will need to:

- Participate in class discussions. We will conduct interactive, un-graded, polls covering topics from the readings.
- Complete three (3) short homework assignments to practice understanding, searching, and reviewing patents.
 - Homework 1:
- **Due Week 3**
 - Students will read a patent and complete a questionnaire about the patent specification, claims, value, etc.
 - Homework 2:
- **Due Week 5**
 - Students will select a provided invention, conduct a prior art search, and complete a questionnaire about the search results and search process.
 - Homework 3:
- **Due Week 10**

- Students will read a patent application directed to the invention they presented during the group presentation and complete a questionnaire providing substantive feedback.
 - Conduct a short (10-15 minute) group presentation on a potentially patentable innovation using the attached template. The presentation will discuss the problem to be solved, prior solutions, novel aspects of the innovation, and how a patent on the innovation might support business needs.
- **Due Week 9**
 - [IP For Engineers - IDF Template](#)

Course Text:

- (Optional) [Howard B. Rockman, Intellectual Property Law for Scientists, Engineers, and Entrepreneurs](#) (2d ed. 2020).
- Additional lecture-specific readings listed below.

Introduction

Lecture 1: Introduction to Intellectual Property (IP) - Week 1

Summary: An overview of Intellectual Property and Intellectual Property Rights and its categories, such as patents, trademarks, copyrights, and trade secrets. The lecture will also touch on the importance of IP for technology companies.

Invention and Technology Feasibility

A technology company starts with technological innovation. When this technology is created, entrepreneurs need to figure out how it can sustain a business. Intellectual property rights can be used to protect innovation and create a sustained competitive advantage for the business.

Lecture 2: Protecting Inventions with Patents (Part 1) - Week 2

Summary: In-depth exploration of patents, including their purpose, the application process, and their lifespan. We will discuss how to prepare an invention disclosure form that describes an invention for patent counsel. Introduce the process of filing and pursuing a patent application in the United States. We will conduct a detailed walkthrough of understanding a patent application, including the specification, the drawings, and patent claims.

Readings:

- USPTO Patent Basics (<https://www.uspto.gov/patents/basics>)

- USPTO Patent Essentials (<https://www.uspto.gov/patents/basics/essentials>)
- (Optional) Rockman, pp. 51-68

Lecture 3: Protecting Inventions with Patents (Part 2) - Week 3

Summary: Continuation of the previous lecture. Discuss the patent examination process in greater detail, including the requirements for patent eligible subject matter, novelty, non-obviousness, and enablement. Briefly discuss how to conduct patent searches using various databases. Finally, we will end with a discussion of different patent theories.

Readings:

- Mark A. Lemley, The Myth of the Sole Inventor, 110 MICH. L. REV. 709 (2012) (<https://repository.law.umich.edu/cgi/viewcontent.cgi?article=1125&context=mlr>)
- Howells and Katznelson, A Critique of Mark Lemley's "The Myth of the Sole Inventor" (<https://works.bepress.com/rkatznelson/68/>)
- (Optional) Rockman, pp. 77-82, 91-98, 107-118, 129-144, 155-178, and 193-204

Lecture 4: Protecting Creative Works with Copyrights - Week 4

Summary: The lecture will cover copyright laws and how they protect software code, semiconductor designs, and other creative works. We will provide an overview of open source software, its importance in the technology industry, its relationship with copyright, and the licensing issues it creates. Finally, we will discuss the implications of copyright for AI in the technology and creative industries.

Readings:

- What is Copyright (<https://copyright.gov/what-is-copyright/>)
- Open Source and Patent Rights (<https://ipwatchdog.com/2023/05/11/patently-strategic-podcast-open-source-and-patent-rights/id=160761/>)
- Key Concepts in Copyright Laws for Generative AI (<https://www.csis.org/blogs/perspectives-innovation/informing-innovation-policy-debate-key-concepts-copyright-laws>)
- (Optional) Rockman, pp. 563-581; 611-614.

Company Formation

Once an entrepreneur decides to form a business, a number of IP issues will arise. These include how to make sure the business owns the rights to necessary inventions, and how to protect the brand of the business.

Lecture 5: Protecting Brands and Fighting Counterfeits with Trademarks - Week 5

Summary: This lecture will delve into the world of brands and trademarks, exploring their role in business strategy. We will discuss the process of obtaining a trademark, the value of a strong trademark, and how to enforce trademark rights.

Readings:

- USPTO Trademark Basics (<https://www.uspto.gov/trademarks/basics>)
- *(Students are advised to read/skim the following content lightly; digesting all empirical detail is not required):* Beebe and Fromer, Are We Running Out of Trademarks? An Empirical Study of Trademark Depletion and Congestion, 131 Harv. L. Rev. 945 (<https://harvardlawreview.org/print/vol-131/are-we-running-out-of-trademarks/>)
- Ouellette, Does Running Out of (Some) Trademarks Matter?, 131 Harv. L. Rev. F. 116 (<https://harvardlawreview.org/forum/vol-131/does-running-out-of-some-trademarks-matter/>)
- (Optional) Rockman, pp. 659-668

Lecture 6: Ownership and Licensing of Intellectual Property - Week 6

Summary: We will discuss inventorship, assignments of intellectual property, and copyright works for hire. This lecture will also discuss university technology transfer, IP transactions, and IP licenses. We will also discuss licensing in the technology supply chain using the semiconductor industry as an example.

Readings: Thompson, OpenAI's Misalignment and Microsoft's Gain, available at <https://stratechery.com/2023/openais-misalignment-and-microsofts-gain/>.

Operations and Product Development

Operating companies face a host of challenges related to the research and development process. These challenges include protecting confidential information when working with partners and maintaining competitiveness in the industry without being dragged into litigation.

Lecture 7: Protecting Confidential Information and Trade Secrets - Week 7

Summary: Discuss the role and importance of Non-Disclosure Agreements (NDAs), non-compete agreements, and trade secrets in startups and operating companies, including how to identify

and protect trade secrets, and strategies for enforcing NDAs. We'll also discuss reverse engineering and conducting competitive intelligence.

Readings:

- Leveraging Trade Secrets as A Hidden Asset for Startup Fundraising (<https://www.linkedin.com/pulse/leveraging-trade-secrets-hidden-asset-startup-fundraising-david-cain-jyyjc>)
- (Optional) Rockman, pp. 627-637.

Enforcing Intellectual Property Rights

In some circumstances an IP owner may find it strategically necessary or beneficial to actively assert or enforce their intellectual property rights. In this context, understanding the mechanisms for enforcement, as well as the potential risks and rewards of various enforcement strategies, is crucial for IP owners to effectively protect their interests.

Lecture 8: Litigation and Enforcement of Patents and other IP Rights - Week 8

Summary: This lecture will primarily address contentious matters relating to patent rights, including various venues such as the Patent Trial and Appeal Board (PTAB), International Trade Commission (ITC), and District Courts. We will cover challenging patents through arguments of invalidity, non-infringement, and non-enablement. The lecture will delve into the processes of patent litigation including infringement contentions, claim construction, and the preparation of expert reports. Similar actions to enforce copyright and trade secret rights will be introduced, including the mechanisms for filing suit, the potential for seeking injunctions, and the calculation of damages. This session will also discuss the strategic considerations an IP owner must evaluate when deciding to enforce their rights and the potential implications of enforcement actions.

Readings: TBD

Group Presentations

Group Presentations on a potentially patentable innovation - Week 9

How to Use Intellectual Property Rights

Lecture 9: Intellectual Property Strategy - Week 10

Summary: This lecture will cover the importance of having a robust IP strategy, including protecting competitive advantage and IP monetization. We will also discuss the role of IP due diligence in fundraising and M&A activities. We will also discuss patent landscaping for a technology, including how patents impact a company's freedom to operate.

Readings: TBD